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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN RE APPLICATION		ATTY. DOCKET:	DE000003
OF:	KARER ET AL.	CONFIRMATION NO.:	6131
SERIAL NO.	09/700,367	GROUP ART UNIT:	1764
FILED:	NOVEMBER 15, 2000	EXAMINER:	A. D. NECKEL

FOR: GAS-PHASE FLUIDIZED-BED REACTOR

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Honorable Commissioner
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REQUEST FOR CONTINUED EXAMINATION
PRELIMINARY SUBMISSION

Sir:

This is a Request for Continued Examination pursuant to 37 C.F.R. §1.114 which is filed in response to the final Office action of August 16, 2005. For further prosecution, kindly enter and consider the attached preliminary amendments[1] and the following preliminary remarks:

PRELIMINARY REMARKS

Claims 1 to 4, 6 to 8 and 10 to 15 as set forth in Appendix II of this paper are now pending in this case.

1) Cf. the **Specification Amendments** set forth in Appendix I on pages 8 and 9 of this paper, the **Claim Amendments** set forth in Appendix II on pages 10 to 12 of this paper, and the **Drawings Amendments** set forth in Appendix III on pages 13 to 15 of this paper.

In addition to editorial changes, applicants have amended Claim 1 to refer to a gas distributor plate in the region of transition in which orifices occupying more than 50% of the surface area, corresponding to the embodiment addressed on page 3, indicated line 5, of the application.

Further, applicants herewith present amended drawings in which Figure 4 has been replaced by Figures 4a, 4b and 4c. The replacement figures illustrate gas distributor plates in which the orifices occupy varying percentages of the surface area of the gas distributor plate, ie. gas distributor plates in which the orifices occupy more than 20%, more than 50%, and more than 90% of the surface area, corresponding to applicants' disclosure on page 1, indicated lines 13 to 15, and page 3, indicated lines 1 to 7, of the application.

Correspondingly, applicants' have amended the Brief and the Detailed Description of the Drawings which had previously been added on page 5 in indicated line 14 of the application.

No new matter has been added.

In light of the foregoing and the attached it is respectfully requested that the Examiner withdraw the objection to the drawings under 27 C.F.R. §1.83(a). Favorable action is solicited.

The Examiner rejected Claims 1, 2, 4, 6 and 10 under 35 U.S.C. §102(e) as being anticipated by the teaching of ***Jorgensen et al.*** (US 6,113,862) pointing out that the reactor of ***Jorgensen et al.*** included inter alia a gas distributor plate in the lower section/region of the transition zone wherein more than 20% of the surface area is open.

It is respectfully submitted that the reactor of ***Jorgensen et al.*** comprises two mandatory types of gas distributor grids in different sections of the reactor.

The first type of mandatory gas distribution grids is a *"primary distribution plate (or fluidization grid)"* in the lower part of the reactor which obstructs at least about 75%, and preferably at least about 90% of the area.[2] The open area of this primary grid is, accordingly, less than about 25% and preferably less than 10% of the available area. ***Jorgensen et al.*** further explain that the primary grip be designed such that the pressure drop across the grid is at least 15%, most preferably greater than about 30%.[3]

2) Cf. col. 4, indicated lines 20 to 23, of ***US 6,113,862***. Cf. also col. 5, indicated line 46, to col. 6, indicated line 2, of ***US 6,113,962***.

3) Cf. col. 5, indicated line 46 et seq., of ***US 6,113,862***.

The second type of gas distribution grids is a *"secondary fluidization grid"* which is located above the primary distribution plate and which obstructs less than about 75%, and preferably less than about 50% of the area.[4] This secondary grid is essentially designed to allow segregation of particles to achieve a relatively homogeneous of "fluid" mixture with a small bubble phase.[5]

The gas-phase fluidized-bed reactor which is defined in applicants' Claim 1 has, in contrast to the reactor addressed by ***Jorgensen et al.***, in the region of transition either no gas distributor plate, of a gas distributor plate having orifices which occupy more than 50% of the surface area. The region of transition of applicants' reactor is, accordingly, at least 2 times "more open" than the openings of ***Jorgensen et al.***'s *"primary distribution plate (or fluidization grid)"*. As such, the arrangement which characterizes applicants' reactor is clearly different from the reactor arrangement which is addressed in the teaching of ***Jorgensen et al.***

Anticipation under Section 102 can be found only if a reference shows exactly what is claimed,[6] and anticipation requires that the identical invention be shown in the reference in as complete detail as is contained in the claim.[7] Additionally, the Federal Circuit has stated that it is error to treat claims as a catalog of separate parts, in disregard of the part-to-part relationships set forth in the claims that give those claims their meaning.[8] In light of the differences between the optional gas distributor plate in the region of transition of applicants' reactor and the *"primary distribution plate (or fluidization grid)"* in the lower part of the reactor addressed in the teaching of ***Jorgensen et al.*** the parts of ***Jorgensen et al.***'s reactor are clearly not in the same part-to-part relationship. Correspondingly, the reactor addressed in the teaching of ***Jorgensen et al.*** is clearly different from applicants' reactor, so that the identity requirement for anticipation in not met. It is therefore

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4) Cf. col. 4, indicated lines 24 to 30, of ***US 6,113,862***. Cf. also col. 4, indicated line 66, to col. 5, indicated line 45, and col. 6, indicated lines 3 to 28, of ***US 6,113,862***.

5) Cf. col. 4, indicated line 66 et seq., of ***US 6,113,862***.

6) Cf. Titanium Metals Corp. v. Banner, 778 F.2d 775, 227 USPQ 773 (CAFC 1985); In re Marshall 577 F.2d 301, 198 USPQ 344 (CCPA 1978); In re Kalm 378 F.2d 959, 154 USPQ 10 (CCPA 1967)

7) Cf. Richardson v. Suzuki Motor Co., 868 F.2d 1226, 9 USPQ2d 1913 (CAFC 1989)

8) Cf. Lindemann Maschinenfabrik v. American Hoist & Derrick Co., 730 F.2d 1452, 221 USPQ 481 (CAFC 1984)

respectfully urged that the rejection of Claims 1, 2, 4, 6 and 10 under Section 102(e) as being anticipated by the teaching of ***Jorgensen et al.*** be withdrawn. Favorable action is solicited.

The Examiner rejected Claim 3 under 35 U.S.C. §103(a) as being unpatentable in light of the teaching of ***Jorgensen et al.*** (ibid.).

While Claim 1 requires that the orifices occupy *more than 50%* of the total surface area of said gas distributor plate, Claim 3 inter alia requires that orifices occupy *more than 90%* of the total surface area of said gas distributor plate. The following remarks are equally applicable to the obviousness/non-obviousness of Claim 1 and of Claim 3.

The Examiner refers in the context of this rejection to statements of ***Jorgensen et al.*** that the fraction of the grid which can be open can be adjusted which are found in col. 5, indicated lines 36 to 39, of ***US 6,113,862***. However, the statements referred to by the Examiner in this context concern the *"secondary fluidization grid"* which is located above the primary distribution plate, rather than the *"primary distribution plate (or fluidization grid)"* which is taken by the Examiner to correspond to the optional gas distributor plate of applicants' fluidized-bed reactor. Since the design and function of the *"secondary fluidization grid"* of ***Jorgensen et al.***'s reactor differ considerably from the design and function of the *"primary distribution plate (or fluidization grid)"* in the lower part of ***Jorgensen et al.***'s reactor, a person of ordinary skill in the art would clearly not have been motivated by statements and explanations of ***Jorgensen et al.*** which pertain to the secondary grid to effect any modifications in the design of the primary distribution plate. The same applies to the statements which are found in col. 6, indicated lines 14 to 21, of ***US 6,113,862***, where ***Jorgensen et al.*** inter alia mention that the grids which obscure less than about 75% have a substantially lower pressure drop than the at least 15%, preferably 30%, which is required to be provided by the primary distribution plate.[9] The Examiner's position that a person of ordinary skill in the art would have been motivated by those statements to *"optimize, by routine experimentation, the open area of the primary grid"* is therefore not deemed to be well taken. Favorable reconsideration of the Examin-

9) Cf. eg. col. 6, indicated lines 16 to 19, and col. 5, indicated line 46 et seq., of ***US 6,113,862***.

er's position and withdrawal of the respective rejection is, therefore, respectfully solicited.

The Examiner rejected Claims 7 and 8 under 35 U.S.C. §103(a) as being unpatentable in light of the teaching of ***Jorgensen et al.*** (ibid.) when taken in view of the disclosure of ***Lubbock*** (US 2,636,712). Claims 7 and 8 depend upon Claim 1 and further provide for a closable flap situated in the region of transition from the circulation gas line into the lower section of the reactor chamber which flap is adapted to prevent the penetration of polymer particles into the circulation gas line when the compressor is switched off, and the teaching of ***Lubbock*** is applied by the Examiner as showing a slide valve with orifices which is used to control the flow of solids.

However, as pointed out in the foregoing, applicants' reactor as defined in Claim 1 and further specified in the dependent claims is distinguished from the reactor arrangement addressed in the teaching of ***Jorgensen et al.*** in that applicants' reactor has, in the region of transition, either no gas distributor plate or has a gas distributor plate having orifices which occupy more than 50% of the total surface area of the gas distributor plate, whereas the reactor of ***Jorgensen et al.*** comprises a mandatory *"primary distribution plate (or fluidization grid)"* in the lower part of the reactor which obstructs at least about 75%, and preferably at least about 90% of the area. That is, the orifices of the primary distribution plate of ***Jorgensen et al.***'s reactor arrangement occupy at most about 25% of the surface area.[10] It has also already been pointed out by applicants in the foregoing that the teaching of ***Jorgensen et al.*** fails to suggest or imply to a person of ordinary skill in the art to decrease the obstruction which is provided by the primary distribution plate of ***Jorgensen et al.***'s reactor arrangement. The disclosure of ***Lubbock*** fails to close or even narrow the gap between the provisions which are incorporated into Claims 7 and 8 by reference to Claim 1.

As explained in MPEP §2143, three basic criteria have to be met in order to establish a *prima facie* case of obviousness:

(1) There must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one

10) Cf., for example, the illustrations provided in Figures 4a and 4b presented herewith by applicants. It is respectfully noted that the grid which is illustrated in Figure 4a meets the requirements of the primary distribution plate of ***Jorgensen et al.*** that at least about 75% of the surface area be obscured.

of ordinary skill in the art, to modify the reference or to combine the reference teachings,

(2) there must be a reasonable expectation of success, and

(3) the prior art reference or the combined references must teach or suggest all of the claim limitations.

Additionally, the teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art and cannot be based on applicants' disclosure.[11] At least two of these basic criteria are not met where applicants' invention and the references relied upon by the Examiner are concerned.

On the one hand, the referenced teachings fail to provide for any information which would have motivated a person of ordinary skill in the art to omit the *"primary distribution plate (or fluidization grid)"* of the reactor taught by ***Jorgensen et al.***, or to replace the primary plate by a gas distributor plate which has more than 50% of its surface area occupied by openings. As pointed out, the grids of ***Jorgensen et al.***'s apparatus which are as "open" as applicants' optional gas distributor plate are present in addition to the *"primary distribution plate (or fluidization grid)"* of the reactor taught by ***Jorgensen et al.***, and are not located in the region of transition.

On the other hand and for essentially the same reasons, the referenced teachings fail to teach or suggest all of the limitations which are set forth in applicants' claims. The teaching of ***Jorgensen et al.*** when taken in view of the disclosure of ***Lubbock*** is therefore not deemed to be sufficient to establish that the subject matter of applicants' Claims 7 and 8, or of any other of applicants' claims, was rendered prima facie obvious under Section 103(a) at the time applicants made their invention.

It is therefore respectfully requested that the rejection be withdrawn. Favorable action is solicited.

The Examiner reiterated the requirement to restrict the claims which are pending in the application to elected Claims 1 to 4, 6 to 8 and 10, arguing that the prior art rejections raised in the Office action supported that unity of invention was lacking. However, in light of the foregoing and the attached, the Examiner's respective argument is no longer valid. Moreover, the particular combination of technical features which characterizes applicants' reactor arrange-

11) In re Vaeck, 947 F.2d 488, 20 USPQ2d 1438, 1442 (CAFC 1991)

ment is neither anticipated nor rendered obvious by the prior art applied by the Examiner. The technical features which characterize applicants' reactor arrangement therefore qualify as the special technical features which define the contribution which applicants' invention makes over the prior art. The respective special technical features are incorporated into Claims 11 to 15 by reference to Claim 1, so that the subject matter of Claims 11 to 15 and the subject matter of Claims 1 to 4, 6 to 8 and 10 is in a technical relationship which involves one or more of the same or corresponding special technical features as required for unity of invention under the circumstances addressed in PCT Rule 13.2. It is therefore respectfully requested that the requirement to restrict the application be withdrawn and that Claims 11 to 15 be grouped together with Claims 1 to 4, 6 to 8 and 10. Favorable action is solicited.

Please charge any shortage in fees due in connection with the filing of this paper, including Extension of Time fees, to Deposit Account No. 14.1437. Please credit any excess fees to such deposit account.

Respectfully submitted,
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Encl.: SPECIFICATION AMENDMENTS (Appendix I)
CLAIM AMENDMENTS (Appendix II)
DRAWING(S) AMENDMENTS (Appendix III)

JDV/BAS